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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/875,084
Filing Date: June 07, 2001
Appellant(s): SANO ET AL.

William M. Schertler

EXAMINER'S ANSWER

This is in response to the appeal brief filed on 2-28-06 appealing from the Office action mailed 6/29/05.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

Art Unit: 2629

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4,762,990	CASWELL et al.	8-1988
EP 0897161	FUJITSU	2-1999
5,438,446	BRANDT	8-1995

(9) Grounds of Rejection

Art Unit: 2629

1. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Caswell et al. (US 4,762,990).

Regarding claim 1, Caswell et al. discloses in figures 1 and 10, an optical scanning-type touch panel (see stylus 10) comprising an optical scanning unit; (laser 6)) for angularly scanning light in a plane substantially parallel to a predetermined region (see retro reflective surface, see column 2, lines 48-50); a mirrored deflecting unit (reflector 32) for deflecting scanning light of said optical scanning unit; and a light receiving unit (figure 10) for receiving the deflected scanning light (see column 6, lines 67-68 and column 7, lines 1-4), for detecting a scanning light cut-off position (see scanning light beam is interrupted by stylus 10, see column 3, lines 56-57), which is produced in said predetermined region by an indicator (see indicator member such as stylus, see column 3, lines 1-2), based on a light receiving output (photocell 9) of said light receiving unit that corresponds to a scanning angle (see figure 1) wherein the deflecting unit (32) has an asymmetrical shaped about an optical axis (because fig. 10 shows the reflector 32 does not locate in the middle of the optical axis).

Regarding claim 2, Caswell et al. disclose further in figure 10, the optical scanning-type touch panel, wherein the shape of said deflecting unit (reflector 32) is asymmetrical in a scanning direction as discussed above.

2. Claim 6 is rejected under 35 U.S.C. 102(e) as being anticipated by Fujitsu Limited (EP patent 0897161 cited by Applicant).

Fujitsu discloses in figures 1 and 3, an optical scanning-type touch panel comprising: an optical scanning unit for angularly scanning light in a plane substantially parallel to a predetermined region (see two lights send/receive unit 1a, 1b); a deflecting unit for deflecting

Art Unit: 2629

scanning light of said optical scanning unit; and a light receiving unit for receiving the deflected scanning light, for detecting a scanning light cut-off position (see cut-off position by finger), which is produced in said predetermined region by an indicator, based on a light receiving output of said light receiving unit that corresponds to a scanning angle (see abstract), and satisfying a condition: (see figure 3)

$d/2+w < D\tan\delta$, where D is a distance from said optical scanning unit (16a) to said deflecting unit (15a), w is a width on said deflecting unit from a path of said scanning light to an end on said predetermined region side, d is a beam width of said scanning light, and δ is a scanning start angle, because Fujitsu Limited discloses in figures 3 and 5 an optical system having an distance (D) from optical scanning unit to the deflecting unit (see 15a), deflecting unit having a width (w), and a beam width of scanning (d), and (δ) or δ is a scanning start angle (see figure 3).

From the figure 3, it satisfies a condition $d/2+w < D\tan\delta$ (see attached paper of figure 3 in the Final Office Action).

3. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caswell et al. (US 4,762,990).

Caswell et al. discloses in figures 1 and 10, an optical scanning-type touch panel as discussed in claim 1 above. However, Caswell et al. does not disclose the shape of the deflecting unit is asymmetrical in a height direction; and a height of said deflecting unit is substantially equal to a height of the optical unit.

From the claims 3-4, it would have been obvious for Caswell et al.'s system to have the shape of the deflecting unit is asymmetrical in a height direction; and a height of said deflecting unit is substantially equal to a height of the optical unit as claimed since such a modification would have involved a mere change in the size/shape of a system. A change in size/shape is generally recognized as being within the level of ordinary skill in the art.

See In Rose, 105 USPQ 237 (CCPA 1995) and

See In re Reven, 156 USPQ 679 (CCPA 1968).

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Caswell et al. (US 4,762,990) in view of Brandt (US 5,438,446).

Caswell et al. discloses in figures 1 and 10 an optical scanning-type touch panel (see stylus 10) comprising an optical scanning unit; (laser 6) for angularly scanning light in a plane substantially parallel to a predetermined region (see the back-ground light level may be maintained high with a retro reflective surface, see column 2, lines 48-58); a deflecting unit (reflector 32) for deflecting scanning light of said optical scanning unit; and a light receiving unit (figures 9-10) for receiving the deflected scanning light (see column 6, lines 67-68 and column 7, lines 1-4), for detecting a scanning light cut-of position (see scanning light beam is interrupted by stylus 10, see column 3, lines 56-57), which is produced in said predetermined region by an indicator (see indicator member such as stylus, see column 3, lines 1-2), based on a light receiving output of said light receiving unit that corresponds to a scanning angle. However, Caswell et al. do not disclose the optical scanning unit is provided with a protective film having a maximum reflectance at an angle of incidence to a scanning angle at which a quality of the

Art Unit: 2629

reflected light is minimum. Brandt discloses in figures 5-6, a reflectance of a aluminum mirror substrate having SiO₂ protective coating (protective film) and having the optimal thickness to be employed to minimize reflectance variations in the range of incident light beam scanning angles that is the quality of reflected light is minimum), therefore, the protective film having maximum reflectance (see column 6, lines 26-47). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of using protective coating (protective film) and having the optimal thickness to be employed to minimize reflectance variations in the range of incident light beam scanning angles as taught by Brandt into the display system of Caswell et al. because this would provide the protective coating at the 15, 30 and 45 degrees angles of incidence of the source light beam through a range of potential protective layer thickness (see Brandt, see column 6, lines 26-30).

Allowable Subject Matter

5. Claim 8 is allowed.
6. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The present invention is directed to an optical scanning-type touch panel comprising an optical scanning unit for angularly scanning light in a plane substantially parallel to a predetermined region. The combination of the closest prior art, Caswell et al. (US 4,762,990), Fujitsu (EP 0897161) and Brandt (US 5,438,446) discloses a similar system. However, they fail to teach the

Art Unit: 2629

optical scanning-type touch panel, wherein the predetermined region has a rectangular shape, and a width of said deflecting unit is substantially equal to a scanning surface opening width of the optical scanning unit in scanning a diagonal section of said predetermined region with light as claims 5 and 8.

(10) Response to Argument

Appellant states that Caswell et al. does not teach the claimed mirror deflecting unit having an asymmetrical shape about an optical axis, as recited in claim 1. The Examiner disagrees because in fig. 10, Caswell et al. discloses the two reflectors 32, each of them does not locate in the middle of the optical axis, thus the reflector 32 having an asymmetric shape about an optical axis.

Appellant further states that claims 3 and 4 is based on an incorrect application of current case law of “a change in size/ shape” because Caswell et al. does not disclose or suggests a deflecting unit “wherein the shape of said deflecting unit is asymmetrical in a height direction” (claim 3), or “wherein a height of said deflecting unit is substantially equal to a height of said optical scanning unit” (claim 4). Examiner respectively disagrees because in claim 1, Caswell et al. discloses in fig. 10, the shape of said deflecting unit (reflector 32) is asymmetrical in a scanning direction as discussed above. However, Caswell et al. does not disclose the shape of said deflecting unit is asymmetrical in a height direction” (claim 3), or “wherein a height of said deflecting unit is substantially equal to a height of said optical scanning unit” (claim 4). It is obvious that the shape of deflecting unit is asymmetrical in scanning direction (claim 3), and shape of the deflecting unit having a height is equal to the height of the optical scanning unit

Art Unit: 2629

(claim 4). Therefore, the two claims can applied to the case law of In re Rose, 105 USPQ 237 (CCPA 1955) and In re Reven, 156 USPQ 679 (CCPA 1968) that is change in size/shape.

Appellant further states that claim 7, "Brandt does not disclose or suggest the optical scanning unit provided with a protective film having a maximum reflectance at an angle of incidence corresponding to a scanning angle at which a quality of reflected light is minimum. Therefore, even if the references are combined, Brandt does not alleviate the deficiencies of Caswell et al. and the combination does not result in the claimed invention. Brandt teaches a scanning polygon mirror 20 that is coated with a substance that minimizes reflectance variations in a range of incident light beam scanning angles (col. 6, lines 40-46). In particular, Fig. 4 of Brandt illustrates a portion of a facet of a polygon shaped rotating mirror (e.g., 20, Fig. 2), the facet having a coating (such as SiO₂) designed to minimize". Examiner respectively disagrees because Brandt discloses in figures 5-6, a reflectance of a aluminum mirror substrate having SiO₂ protective coating (protective film) and having the optimal thickness to be employed to minimize reflectance variations in the range of incident light beam scanning angles (that is the quality of reflected light is minimum), thus, the protective film having maximum reflectance (see column 6, lines 26-47). Caswell et al. discloses an optical scanning-type touch panel as discussed above, Brandt discloses a reflectance of a aluminum mirror substrate having SiO₂ protective coating (protective film) and having the optimal thickness to be employed to minimize reflectance variations in the range of incident light beam scanning angles. Therefore, the combination of Caswell et al. and Brandt are satisfied for its intended purpose.

Appellant also states in claim 6 that "Figs. 1 and 3 of EP 0897161 disclose the invention recited in claim 6. However, EP 089716 1 does not disclose or suggest the relationship $d/2 + w < D \tan \delta$ between component optical members of an optical scanning-type touch panel, as recited in claim 6. In the November 8, 2004 Office Action, the Examiner supplied a handwritten copy of drawing Fig. 3 from EP 0897161 in support of the rejection of claim 6. A copy of the Examiner's handwritten drawing is attached as Attachment A.

"However, the Examiner's handwritten drawing supporting the rejection of claim 6 distorts the scanning start angle δ of actual Fig. 3 in EP 0897161 in order to make the drawing fit the equation $d/2 + w < D \tan \delta$. In other words, by making the scanning start angle δ large, $D \tan \delta$ is made large to satisfy the equation $d/2 + w < D \tan \delta$. This is improper under reject 102. Under reject 102, the Examiner must find all elements of the claim either expressly or inherently in the prior art reference. The Examiner cannot supply dimensions or sizes of angles herself. As shown in Fig. 3 of EP 0897161, the scanning start angle is not nearly as large as shown in Attachment A".

"Unlike the Examiner's portrayal of Fig. 3 in Attachment A, Fig. 3 of EP 0879161 does not disclose or suggest the invention recited in claim 6".

Art Unit: 2629

“Specifically, as discussed in paragraphs [0050] to [0056] of EP 0879161 and shown in Attachment B, Fig. 3 illustrates a half mirror 15a and a prism mirror 17a of a light send/receive unit 1a positioned in a housing 10a. The half mirror 15a and prism mirror 17a are outside of a reference line (see Attachment B) connecting a polygon mirror 16a and 16b, which are positioned in the light send/receive unit 1a and 1b, respectively, and at an angle δ with respect to the reference line so as to solve a problem that scanning light from the polygon mirror 16a is shielded by the half mirror 15a and the prism mirror 17a and thus sufficient scanning cannot be performed in the direction of the display screen 10”.

Examiner also respectively disagrees because in fig. 3 of EP 0879161 shows a similar claimed invention, examiner can express the formula into the figure 3 to satisfy the requirement of the claimed invention as discussed above.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Kimnhung Nguyen




Conferees:

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